WHAT IS CLAIMED IS:

1.   An exhaust gas processing device of a diesel engine, comprising:

a filter provided in an exhaust passage of the engine, which traps diesel particulate matter (DPM) in the exhaust gas; and

a controller configured to:

determine whether, during previous regeneration processing of the filter, the previous regeneration processing was interrupted or whether the previous regeneration processing was completed without interruption; and

estimate a trapped DPM amount in the filter on the basis of a pressure loss in the filter during running following uninterrupted completion of the previous regeneration processing in the previous regeneration processing of the filter, and estimate the trapped DPM amount in the filter on the basis of a discharged DPM amount during running following an interruption in the previous regeneration processing in the course of the previous regeneration processing of the filter.

2.   The exhaust gas processing device as defined in Claim 1, wherein the controller is further configured to:

determine whether a regeneration timing for the filter has been reached on the basis of the estimated trapped DPM amount; and

perform regeneration processing of the filter when it is determined that the regeneration timing of the filter has been reached.

3.   The exhaust gas processing device as defined in Claim 2, wherein the controller is further configured to perform complete regeneration processing, which is regeneration processing in which the DPM trapped in the filter is burned

completely.

4.   The exhaust gas processing device as defined in Claim 2, wherein the filter regeneration processing performed by the controller includes:

complete regeneration processing in which the DPM trapped in the filter is burned completely; and

balance point regeneration processing in which the amount of DPM flowing into the filter 41 and the amount of DPM that is burned in the filter 41 are balanced such that the trapped DPM amount in the filter is maintained at a constant level.

5.   The exhaust gas processing device as defined in Claim 4, wherein the controller is further configured to:

record information indicating that the regeneration processing of the filter has been interrupted and information indicating that the regeneration processing of the filter has been completed without interruption; and

when determining from the recorded information whether the regeneration processing of the filter was interrupted or the regeneration processing of the filter was completed without interruption during the previous regeneration processing of the filter, refrain from recording the information indicating that the regeneration processing of the filter has been interrupted if balance point regeneration processing has been interrupted.

6.   The exhaust gas processing device as defined in Claim 5, wherein the controller is further configured to:

determine whether or not regeneration processing before the previous

regeneration processing was complete regeneration processing when the previous regeneration processing of the filter was balance point regeneration processing;

when the regeneration processing before the previous regeneration processing was complete regeneration processing, determine from the recorded information whether the regeneration processing before the previous regeneration processing was interrupted or the complete regeneration processing before the previous regeneration processing was completed without interruption during the complete regeneration processing before the previous regeneration processing; and

estimate the trapped DPM amount in the filter on the basis of the detected pressure loss in the filter during running following the previous balance point regeneration processing when the complete regeneration processing before the previous balance point regeneration processing was completed without interruption in the complete regeneration processing before the previous balance point regeneration processing, and estimate the trapped DPM amount in the filter on the basis of the discharged DPM amount during running following the previous balance point regeneration processing when the complete regeneration processing before the previous balance point regeneration processing was interrupted in the course of the complete regeneration processing before the previous balance point regeneration processing.

7. An exhaust gas processing method for a diesel engine comprising in an exhaust passage a filter which traps DPM in the exhaust gas, comprising:

determining whether, during previous regeneration processing of the filter, the previous regeneration processing was interrupted or whether the previous regeneration processing was completed without interruption; and

estimating a trapped DPM amount in the filter on the basis of a pressure loss

in the filter during running following uninterrupted completion of the previous regeneration processing in the previous regeneration processing of the filter, and estimating the trapped DPM amount in the filter on the basis of a discharged DPM amount during running following an interruption in the previous regeneration processing in the course of the previous regeneration processing of the filter.

8.   The method as defined in Claim 7, further comprising:

determining whether a regeneration timing of the filter has been reached on the basis of the estimated trapped DPM amount; and

performing regeneration processing of the filter when it is determined that the regeneration timing of the filter has been reached.

9.   An exhaust gas processing device of a diesel engine, comprising:

a filter provided in an exhaust passage of the engine, which traps diesel particulate matter (DPM) in the exhaust gas;

means for determining whether, during previous regeneration processing of the filter, the previous regeneration processing was interrupted or whether the previous regeneration processing was completed without interruption; and

means for estimating a trapped DPM amount in the filter on the basis of a pressure loss in the filter during running following uninterrupted completion of the previous regeneration processing in the previous regeneration processing of the filter, and estimating the trapped DPM amount in the filter on the basis of a discharged DPM amount during running following an interruption in the previous regeneration processing in the course of the previous regeneration processing of the filter.